

Navajo Coal Field

Location

The Navajo coal field is located on the Navajo Indian Reservation within San Juan County in northwestern New Mexico. The field extends from the San Juan River on the north to the eastern edge of the Navajo Reservation at the boundary between R. 14 W. and R. 13 W. (Shomaker, 1971).

Stratigraphy

The stratigraphy and coal geology was first studied in detail by Bauer and Reeside (1921). The thickness of the Pictured Cliffs Sandstone was measured at Brimhall Wash, and the thickness of the Fruitland Formation was obtained at Cottonwood Arroyo (Bauer and Reeside, 1921).

Table. Stratigraphy—Navajo coal field.

Stratigraphic units	Depositional environment	Thickness (ft)
Kirtland Shale	alluvial plain	~1,000
Fruitland Formation	coastal plain; major coal	330
Pictured Cliffs Sandstone	nearshore marine	49

Coal Deposits

Bauer and Reeside (1921) mapped two continuous coal beds in the northern part of the field and as many as five fairly continuous coal beds in the central and southern parts of the field. The coals dip at about 1 degree to the east into the San Juan Basin (Bauer and Reeside, 1921). The low dips keep the coal within 1,000 ft of the surface in a band about 10 mi wide, east of the outcrop belt.

Coal Quality

Coals are subbituminous A to high-volatile C bituminous (Hoffman, 1996). Average ash, sulfur, and heat contents in the table below are from Hoffman (1996).

Table. Coal in Fruitland Formation.

[Values reported on an as-received basis]

	Ash content (percent)	Sulfur content (percent)	Heating value (Btu/lb)
Average	19.29	0.79	9,124
Standard deviation	3.23	0.27	647
Number of analyses	39	37	39

Resources

Demonstrated surface minable coal resources in the field are about 1.3 billion short tons for beds greater than 2.5 ft and less than 200 ft of overburden (Hoffman, 1996).

Production History

The Navajo mine opened in 1963 and has produced high volumes of coal each year since (Hoffman, 1996) (average of 8.3 million short tons between 1991–1995—G. Sullivan, written commun., 1997—compiled from Mine Safety and Health Administration data). One other major operation, the Burnham mine, operated in the area from 1978–1984.

References

- Bauer, C.M., and Reeside, J.B., Jr., 1921, Coal in the middle and eastern parts of San Juan County, New Mexico: U.S. Geological Survey Bulletin 716-G, p. 155–237.
- Hoffman, G.K., 1996, Coal resources of New Mexico: New Mexico Bureau of Mines and Mineral Resources Resource Map 20, 22 p., 1 plate, scale 1:1,000,000.
- Shomaker, J.W., 1971, Navajo Fruitland field, *in* Shomaker, J.W., Beaumont, E.C., and Kottlowski, F.E., eds., Strippable Low-Sulfur Coal Resources of the San Juan Basin in New Mexico and Colorado: New Mexico Bureau of Mines and Mineral Resources Memoir 25, p. 108–110.